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CAPITALISM AND ECOLOGY: FROM THE DECLINE OF CAPITAL TO THE DECLINE OF THE WORLD

DOCUMENTATION CAPITAL, CAPITALISM, CAPITALOCENE, ECOLOGY, MARXISM

'Kapitalismus und Okologie' (1976) by Paul Mattick, translated by Paul Mattick Jr.

The historical character of nature follows from the Second Law of thermodynamics, discovered more than a hundred years ago by Carnot and Clausius, spelling an increase in entropy ending in heat death. Our earthly life depends on the continuous supply of energy from solar radiation, which decreases with increasing entropy, however slowly. The period of time involved is indefinite from the human point of view, too gigantic to be taken into practical consideration. Nevertheless, the entropy law has a continuous, direct influence on the earth and therefore on the fate of humankind. Apart from the sun, the mineral wealth of the earth provides for the satisfaction of human energy needs. Its exploitation, however, hastens the transformation of "free" into "bound" energy, that is, energy no longer available for human use and degrading towards heat death. In other words, the available energy sources can only be utilized once. With their exhaustion human life would come to an end, and indeed very long before the cooling of the sun, as all the natural riches of the earth contain no more energy than two days' sunlight.

For humanity, therefore, the Second Law of thermodynamics comes down to the limitation of natural wealth. The more slowly it is extracted, the longer humanity can live; the faster it is utilized, the sooner we will reach our end. Since consumption varies with the size of the population, the moment at which the world will collapse is connected with the population problem. In order to delay this collapse, population growth must be limited and the consumption of natural resources be decreased. To this problem, raised with regard to the capitalist world by the Club of Rome, Wolfgang Harich has turned with regard to communism, which has up to now similarly been engaged in endless economic growth.¹

The old saying fits Harich: "The cat won't leave the mouse alone." His many years in Walter Ulbricht's prisons have not been able to break his spirit of opposition. As after June 17, 1953 he turned against the Stalinist course in the DDR, in the interest of the DDR itself, so today he turns against the growth ideology reigning in that country, to save the world by means of communism. After

1953 the DDR should have come closer to the West in order to master its inner contradictions; today the ecological problems raised in the West should be tackled by the East, in order to prevent the destruction of the world. The abolition of capitalism is thus for Harich not only the goal of communist politics but the only adequate means to move to a world without growth, on which depends the long-term survival of the human race. He expressed his views in interviews with Freimut Duve, with the hope that they would not again be misunderstood in the DDR.

Neither Marx nor classical economics related their theories to the entropy law. Malthus, however, opened up the population problem for debate and Ricardo saw the tendency to declining returns from the land as a limit to capitalist development. In this way they apologetically portrayed specifically capitalist contradictions as natural and unalterable processes. These theories were developed at a time when agriculture still dominated the economy and industrial development was making its initial take-off. Although production is determined by nature and human beings, Marx's and Engels's chief attention was directed not to natural limitations but to those due to the capitalist mode of production, since the world—seen as nature—was still quite underpopulated, and the “overpopulation” of which Malthus wrote was a direct result of capitalism. Of course, an increasing population presupposes the increasing productivity of labor, and this, in turn, presupposes changes in social structure. “The more I go into the stuff,” Marx wrote Engels, “the more I become convinced that the reform of agriculture, and hence the question of property based on it, is the alpha and omega of the coming upheaval. Without that, Father Malthus will turn out to be right.”²

In the light of the dominance in the DDR of the ideology of growth, which is supposed to take the development of the productive forces beyond any reached so far, Harich seeks to legitimate his interest in ecology with references to Marx and Engels and to dialectical materialism. Citing the French Communist G. Biolat, he maintains that “the development of ecology expressed a new *deeply dialectical* approach to the study of nature,” so that his own concern “is as orthodox as one could wish.” Ecology concerns itself with the “reciprocal action between nature and society,” which can only be fully comprehended by the adepts of “the dialectics of nature” and the “Marxist theory of knowledge refined by Lenin.”

Now, the metabolism between humans and nature, which can also be understood as a mutual interaction, has in itself nothing to do with the question of the dialectics of nature, and will not be disputed by those for whom the dialectic has no validity. Therefore Lenin's epistemology is also not required in order to discuss ecology and the threats to it, just as his possession of this epistemology, as Harich must to his sorrow recognize, has until now contributed little to the knowledge of ecological problems. In any case, the Club of Rome is unconcerned with dialectical materialism. As in the last analysis it hardly matters even for Harich whether the dialectics of nature already included the ecological problem, it is not necessary to discuss his party-line Leninist orthodoxy. His argument rests not on the dialectics of nature but on the calculations of the Club of Rome, which start from the too rapid consumption of natural resources and the population explosion to predict a decline of humanity in the not too distant future.

There are aspects of nature which can be grasped with formal logic and others which require the use of dialectical logic. Discoveries in microphysics enforce a logic adequate to this object, which is not identical with either formal or dialectical logic. But the means for the understanding of nature and the relevance of its regularities on the human beings who investigate them give no information about the “totality” of nature and its laws of motion, which are closed to us up to now, and no doubt permanently. Even if dialectical logic would be required for the study of nature, we could draw no conclusions from this about the dialectics of nature; in contrast, the dialectic of society is visible in its economic development and class struggles. One can, of course, describe the entropy law as “dialectical,” just because it implies lasting qualitative changes, especially if one traces all economic and biological processes to their physical basis. But the Second Law of thermodynamics was discovered by physical chemistry, not by the dialectical method, and is quite sufficient to illuminate ecology from both a biological and a social point of view.

Marxism is not a natural science, and in fact not a science in the bourgeois sense, but uses scientific methods in order to discover the presuppositions and necessities of social transformation in general and of the abolition of capitalism in particular, in order to intervene practically in social processes. Laws of nature cannot be changed; they have to be accepted, although increasing understanding of them becomes a human force of production, determining the possibilities of social development. If nature as it affects human beings can thus only develop in one direction, namely its end, so long as the world exists the problems of humanity are determined by this world and must be decided within it. Even if it were true that thermodynamics is only a characteristic of an expanding universe and that in a contracting universe the opposite process would occur, leading to a new production of matter out of radiation, this has no significance for the world which would have disappeared in the mean time, together with its inhabitants.

It is also obvious without reference to the entropy principle that the metabolism between humanity and nature depends on the fruitfulness of the earth and the productiveness of its raw materials. With the exhaustion of the latter the sources of energy decline and with them the possibility of human interventions in natural processes. The world in which Marx and Engels lived knew, however, none of the nature-determined limits to production. Neither physical nor biological processes explained the unpleasant social conditions. The exhaustion of the earth's wealth and relative overpopulation were the direct result of production for profit and could be undone by the elimination of the capitalist relations of production. One could not yet speak of an ecological crisis, in particular not from a Marxist standpoint.

Are things different today? According to the Club of Rome and Harich, we are in the midst of an ecological crisis, which obliges Marxism also to go more deeply than before into the natural basis of society and into the population question raised by Malthus. Harich believes that communist scientists, if not yet in the DDR then in the USSR, "are beginning to focus with growing insight on the ecological crisis." To repeat: the problem can be summed up in three ideas—environmental overload, consumption of raw materials, overpopulation. The solution, according to Harich, lies in reversing these processes. This, however, implies the destruction of capitalist society and therefore revolutionary transformations on the global level.

According to Harich, however, we can today no longer speak of the communist revolution as it was once imagined, freeing the social forces of production from the fetters of the capitalist relations of production in order to meet growing needs, but must take up Babeuf's idea of turning back the productive forces and human needs in the direction of the pre-industrial ascetic collectivity. Marx had already emphasized that in capitalism the productive forces had become forces of destruction, "and exactly this," says Harich, "we are experiencing today." But this is a misunderstanding on Harich's part. Even considering the destructive side of capitalist development, Marx saw in communism the only possible way to a further *progressive* development of the productive forces, on which the overcoming of human poverty as determined by capitalism, as in general, depends. Certainly this growth of the social forces of production includes the requirement that it should no longer serve the blind drive for valorization of capital, but rational human needs, which are themselves determined by the technologico-scientific character of the additional productive forces.

Now this may turn out to be utopian, not only because of the long-lived character of capitalism but also because of limits to economic growth set by nature and not considered by Marx. The relative overpopulation Marx wrote about has, according to Harich, become absolute overpopulation, which cannot be overcome by means of a change from capitalism to communism, but only through its systematic reduction by means of population planning—and not only in the "Third World" but on the global scale. Thus even communism allows for no further development on the basis of modern industry, but requires economic planning without growth and possibly the liquidation of forms of production already in use.

The ecological crisis discovered by the Club of Rome and others can be seen as a new attempt—similar to the efforts of Malthus and Ricardo—to explain social difficulties as the result of natural conditions, since to them the form of society appears to be natural and unchangeable. The novel element is that today there is agreement from the "Marxist" side, with either a good or a bad conscience. Of course, Harich's position differs from that of the Club of Rome in that he remains aware that even with a full understanding of the crisis situation the capitalist world is in no position to take measures to preserve human life for the distant future, even if on a more modest basis. The Club of Rome, Harich notes, indeed speaks of an expectable impoverishment and destruction of the world, but "it does *not* say that the rich must disappear from the picture." People are indeed ready today "to ration gasoline," but not prepared "to ration *everything*." But why shouldn't everything be rationed, and indeed on a socialist basis, asks Harich; "Wouldn't that already be communism?" Would it not be, "as a result of a *rational* distribution, Babeuf's communism, to which the workers' movement must now, having reached a higher level, turn back with a dialectical spiral movement—the negation of the negation—after the 'springs' of capitalist wealth have flowed for nearly 200 years?"

But why stop with Babeuf? Why not return to the perfect ecology of Paradise before Original Sin? The one is as much an impossibility as the other, on which Babeuf must come to grief. History cannot be made to go backwards, not even through the "negation of the negation." A rationed distribution itself presupposes productive forces which are a match for the needs of four billion people, and with this continued productive development, in order to counter the law of increasing entropy, i.e. to support the negative entropy of the living world with the least expenditure of "free" energy.

But apart from this, the rationing of which Harich speaks is not at all foreign to the capitalist world, where it is to be found, applied more or less thoroughly, in wartime (and also in "war-communism"). Besides, capitalism is based, in the form of the law of surplus value, on a form of "rationing" of proletarian living conditions, something that also characterizes the relations of production in the putatively "socialist" countries, although there surplus value can appear directly as surplus product. In fact, the existence of capital, as Harich himself explains, hangs on the continuing "rationing" of the producers, in order to satisfy the growing surplus-value requirements of accumulation. When and to whatever extent it is necessary, capital will also seek political ways to push the living conditions of the workers down to a more modest level. The expanding poverty on the global level is a product of surplus value production, the result of capitalism's "rationing" of the conditions of life of ever greater masses of people, and can therefore not be recommended as a solution to the ecological crisis. If it were a solution, capital would be in the best position to carry it through.

When Harich speaks of the necessity to reduce production and consumption, the question arises: of whom is he speaking, actually? The workers, from whom always more surplus value is being extracted? The unemployed, who can hardly keep their heads above water? The hundreds of millions in the underdeveloped countries, who suffer from malnourishment and slow (or often fast) starvation? And if absolute overpopulation and the too rapid consumption of raw materials are the causes of these sufferings, then a more just distribution cannot change much essentially. Thus, according to Harich, we must call an end to accumulation, so that social production on the basis of simple reproduction, and with zero population growth, can finally match consumption.

The capitalist relations of production and property exclude the possibility of simple reproduction. Interruption of the industrial

development demanded by the pressure to accumulate brings economic crisis and the misery of a depression. From the point of view that sees the ecological crisis as already underway, this would of course be a welcome situation. But as a crisis situation without a revolutionary contestation of the capitalist system can lead only to a new phase of accumulation, a realization of simple reproduction is reserved for communism. Indeed, in Harich's conception communism also not a reality, but its preconditions have already been established with the existence of "socialist countries." It depends on them, and on the workers' movements in the capitalist countries, whether society can preserve its natural basis. "The overthrow of the bourgeoisie, the creation of the dictatorship of the proletariat, and the realization of communism are," according to Harich, "the presuppositions for the social realization of the demands of the Club of Rome."

Apart from a handful of scientists, however, neither the authorities of the "socialist countries" nor the workers of the capitalist world are conscious of this important task. As Freimut Duve emphasizes, "the economic policies of all nations—without exception—are the same as if the studies of the Club of Rome had never been made." This holds also for the "socialist countries," which does not stop Harich from ascribing to them the possibility of a faster and better adaptation to the ecological crisis, as they are not subject to the pressure for expanded reproduction. Since in any case the destruction of the environment is a problem for industrial society generally, the possibility of coming to grips with this problem is in no way system-neutral. Certainly, unfortunately, the raw-materials resources of the "socialist" countries make a prior communist revolution unnecessary. But they will nevertheless finally deal with the ecological crisis, as communists "will never resign themselves to the idea that humanity is doomed to destruction."

In the meantime, it is a matter of once more swimming "against the current" and holding an image of the future to the eyes of the world, so as to indicate the pathway to escape. That the Club of Rome can only warn and make proposals, according to Harich, changes nothing in the "revolutionary explosive force" of the ecological understanding it has achieved. The implications of this understanding can only be drawn by the workers' movement and the workers' states, but they demand the revision of traditional communist ideas. "The advantages of the socialist system must be utilized, in order to regulate by planning the production of all material goods, to do optimal justice to the criteria of ecology..." To this end, says Harich, "the left-wing parties must now immediately begin to explain to the working class the reasons why which it will halt economic growth as soon as it has come to power, and impose material restrictions on the whole population, including the workers." This will thus be a revolution not for improving but for lowering of the workers' standard of living.

It will be difficult to arouse much revolutionary enthusiasm for this project. This is Harich's greatest worry. As a truth-loving person he wishes to awaken no illusions and make clear to the workers the necessity of new privations, "as popular as possible and as unpopular as is necessary *given the judgment of science*." In any case we must put as much of an end as we can to prosperity thinking and the fetishism of growth, "by means of re-education, though also, when necessary, by rigorous repression, perhaps by the shutdown of whole branches of production, accompanied by legally imposed cold-turkey cures." It is clear, at least for Harich, "that for this the social ownership of the means of production, administered by the proletarian state, is the necessary precondition." But this is not enough. The proletarian state must also have the power to control individual consumption according to criteria imposed by ecology. "In the finite system of the biosphere," Harich continues, "in which communism must make its way, it must transform human society into a homeostatic stationary state which, just as it limits the continuation of the dynamic of capitalism or of socialism, also has no place for the limitless freedom of the individual. Any idea of a future withering away of the state is therefore illusory."

This "revision" of "classical Marxism-Leninism" is directed of course only against the ideology and not against the reality of the "socialist" countries, which have never, and do not now, intend to renounce "state authority and codified law" in order to realize communism in the original Marxian sense. But just as the authoritarian state, according to Harich, was necessary in order to create the "heavy industrial foundation of national self-determination" with "unexampled harshness and brutality," it is even more necessary today in order to dismantle this foundation. As Stalin "governed the country" with the goal of industrial development, so must the proletarian state, taking into its calculations the forecasts of science, utilize all necessary means to force people into a life in accordance with ecology. Babeuf's communism itself cannot be left to the workers, but can only be achieved through the unavoidable state power exercised by Marxist-Leninist parties.

To this Duve objects that one cannot speak of communism in relation to Harich's authoritarian ideas, since "the administration of want in any case will give the administrators the real power." The perpetuation of the state is naturally the perpetuation of class society and so of exploitative relations of production, which are at the same time relations of property. As *state property* the means of production appear in future as means of production separated from the workers. How and what is produced is subordinated not to their control but to that of state institutions, which supposedly represent the interest of society. But this society remains divided into one group of people organized through the state, who control the means of production and so the distribution of the product, and the mass of the population, who must follow their orders. This new type of society characterized by state control of the means of production appears to the bourgeoisie as state socialism, or simply socialism, but is capitalist in its relation to the workers, something which is conveniently expressed in the concept of state capitalism, although it seeks to present itself as socialism.

Once this situation is established, the social reproduction process takes place as the reproduction of state domination and social

wealth grows as the increase of state power. Apart from the international competitive struggle among nationally-organized capitals, which will be even sharper thanks to the differences between the capitalist systems, the privileged class building itself up within the social relations of state capitalism has its own direct interest in the increase of the surplus product at its disposal and so for the development of the productive forces on a state-capitalist foundation. It cannot be expected freely to set limits on the productive forces, and to the extent to which it is forced in this direction it will not apply the resulting privations to itself, but impose them on the powerless mass of the population. The ecological argument, of course, offers a good alibi.

It is already of use to Harich for the defense of the continuing backwardness of the "socialist" countries in comparison to the capitalist industrial nations. "We must transform the West-East gradient of living standards," he says, "which up to the present has limited the progress of the proletarian revolution in the industrial capitalist countries, into an East-West gradient of exemplary care for the environment, of rational, moderate, economical handling of raw materials and a quality of socialist life in accordance with it." Workers in the West, even if only after a successful revolution, are to take the lower standard of living of the East as a model and perceive their revolutionary duty in the renunciation of the few comforts which capitalism occasionally offers them. What the workers of the DDR experience should thus make clear to those in the West "that the characteristics of the DDR, as of the socialist camp in general, which we usually see as disadvantages, are advantages as soon as we measure them against the new standards of the ecological crisis."

This inversion of hitherto existing values can, however, in Harich's conception not be achieved overnight. Babeuf's communism of equals presupposes a "first socialist phase," as Marx already stressed and as exists in the DDR: i.e. a distribution not according to need but according to work performed. As it is the "proletarian state" that judges performance, this state becomes the instrument of inequality and has no other content than this inequality, or itself. But just as little as the ruling class in private capitalism is willing freely to give up its privileges, so little will the new class ruling through the "proletarian state" give up the privileges associated with it. The "socialist state" is no more able to respond to the warnings of the Club of Rome à la Babeuf than capital; it acts instead at the expense of the workers, as always, with or without the ecological crisis. And as little as the working class will be ready, under the conditions of exploitation and inequality that obtain in the capitalist countries, to set aside its needs to preserve the environment, so little will the workers of the "socialist" countries renounce an improvement of their living standard in the interest of "future generations." The class struggle, always latent, will decide the further course of economic development. If economic growth is to be halted the class struggle must also be abolished, or, to use Harich's terminology, the "dictatorship of the proletariat" under the leadership of the communist parties must be created on a global scale in order to meet the demands of the ecological crisis even in the "first phase" of communism.

The class struggle cannot of course be abolished by means of state power but only carried on in a one-sided way for a longer or shorter period, that is, through the fascist or democratic dictatorship of capital or through the "dictatorship of the working class" in the sense of "Marxism-Leninism." Just as the economic crisis arising from the capitalist relations of production sharpens class antagonisms, so must the measures for overcoming the ecological crisis, which are the same as those responding to an economic crisis, be expected to sharpen class conflicts. The continuing threat to the ruling classes will, on the one hand, push the latter to keep their power by dictatorial means; on the other, they will also seek to meet the demands of the workers halfway, in so far as this is possible. For private capital this can only be a matter of measures that lead to the resumption of capital accumulation and with it the expansion of production. To keep their power, the ruling classes of the "socialist" countries must increase the productivity of labor and expand production, committing themselves without a backward glance to the ecological consequences of further growth.

Thus the warnings of the Club of Rome fall on deaf ears everywhere, and particularly in the "socialist" countries, where a new "bourgeoisie" has come into existence on the foundation of the state. Harich conjures up a lack in understanding on the part of the "communist" authorities, which could be remedied by "scientific" insight, but the real problem is the class consciousness of a new ruling class, as strong as that of the old ruling class. It is the falsification of socialism in state socialism, the only kind of "socialism" that Harich can imagine, which allows him to make his ecological hopes depend on state dictatorship and its perpetuation.

If the salvation of the world depends on the already existing "socialist" countries and future ones like them, we can abandon all hope. What Harich reproaches capitalism for, its inability to call a halt to economic growth, is as true for the state-capitalist systems posing as "socialism." His illusionary demand for "a stationary state of humanity within the system of nature" requires the simultaneous overcoming of the capitalist and state-capitalist systems and would require revolutionary movements which would not subordinate themselves unconditionally to the "judgment of science" or the state but would, without obedience to authority, make themselves at home in the world in a way corresponding to their own necessities and needs.

As such movements do not exist, we are stuck with the ecological crisis. "Science" is not responsible for the practical application or failure to apply the knowledge won by it; these are left to the governments and so to the ruling classes. It is peculiar that Harich criticizes the fetishism of growth in the name of science, since the latter is itself only an aspect of the fetishism of growth. Science is represented by people, who are not only scientists but also members of society, and it is particular social interests that determine the fields of application of science. The development of the capitalist forces of production or—what comes to the same thing—the generation of the "ecological crisis" was a process made possible by science, to an increasing extent a direct result of

science and its influence on technology. It is from this environment-destroying science that Harich now expects the necessary instructions for the reconstruction of an ecological equilibrium, whose practical realization would set definite limits not only to the growth of the economy but to that of science. He speaks of course of science under the "dictatorship of the proletariat," but since this is only another name for the still existing capital-worker relation, in the form of state property, here also the development of science depends on the further growth of the productive forces, as the socially-determined interests of the scientists remain tied to the progress of state-capitalism.

This is apparently contradicted by the recognition given to the Club of Rome by Russian scientists, as well as by the attention given generally to the Club's discoveries, credited with "revolutionary explosive force." It seems astonishing that these researches have been financed by capitalist institutions and business concerns, such as the Volkswagen Foundation, to say nothing of the unexpected liberalism with which totalitarian states have allowed their academics the right to pessimistic futurology. Do we here see science as such, independent of its social environment, opening up a free path, or are its present-day concerns also those of the ruling classes? Is this development perhaps a part of called-for long-term planning, or only a spontaneous reaction to a shortage of necessary raw materials and fuels, politically engineered in the framework of the price mechanism? Or are we here dealing with no more than a free rein given to science, which can ultimately lead only to extensive projects to give the scientists jobs and incomes? Although the ecological problem actually exists, the researches into it have almost no practical meaning. In so far as one could ascribe practical significance to them, it is a contradictory one: while they are able to explain the dreadful situation to the workers in the East and West and halt their struggle for better living conditions, an increase in surplus value or surplus product still requires progressive ecological destruction.

The absolute maintenance of an ecological balance is impossible. But today the prolongation of human existence by respecting the limits set by nature is a possibility, but one whose realization would require the end of the capitalist overexploitation of natural resources. The limits set by nature are in any case not yet the most important. What is necessary, today and tomorrow, is to end the human misery due to the capitalist relations of production, as the starting-point for a rationally planned mode of society in accordance with natural conditions—one based not on further privations but on a higher standard of living for everyone, on which the diminution of population growth depends, and which would make possible the further development of society's productive forces.

The progressive destruction of the environment is not so much the result of growing productive forces as of the development of these forces under capitalist conditions. Were capitalist production really what it is claimed to be, production for the satisfaction of human needs, the development of the productive forces would have had a character different from the actual one, with a different technology and different ecological consequences. With respect to this, enlarged reproduction with a growing population and increasing needs makes no difference in principle. But the development of the productive forces takes place on the basis of capitalist production relations and is thus bound to the production of capital; it can serve human needs only insofar as they coincide with the requirements of capitalist accumulation. This rules out any direct reference to true social needs and to the natural limits of social production. Under the conditions of capitalist competition, which are not abolished by monopoly capital, and to which the state-capitalist systems are subordinated as parts of a global system, the development of the productive forces advances blindly, especially as attempts are made to bring production under conscious central control on the national level. This process requires an enormous wastage of human labor power and natural resources, which would not occur (at least to the same degree) in another social system.

Although there is not much sense in it, one could calculate to what extent the expansion of capitalist production is determined by the requirements of human existence and to what extent by the specific character of the capitalist mode of production. In other words: what would production look like without all the productive and unproductive activities required by capitalism? Surely such a calculation would show that at least half of capitalist production could be dispensed with without affecting people's living conditions. The larger portion of labor performed today is unproductive, making "sense" only within the capitalist market and property relations. It could be transformed into productive labor—"productive" not in the sense of profitable but in the sense of creative of use-value—while shortening labor time. Such production, with the disappearance of the profit principle, competition, and the unnecessary "moral depreciation" of the means of production, would bring a meaningful savings of raw materials without diminishing production to meet human needs.

Such a transformation requires a social order different from the existing ones. If we follow the calculations of the Club of Rome, it may be that—given overpopulation, the limited carrying capacity of the earth, and the drying up of sources of energy—the opportunity to make it may already have been lost. A glance at today's world production shows clearly that we cannot yet speak of an actual lack of material resources. To the contrary, and despite the short, artificially produced "energy crisis," the world is suffering from "overproduction," from an insufficient effective demand, even on the basis of a low rate of accumulation, which by itself sets limits to the expansion of production. The crisis situation we are experiencing has as yet no natural causes, but has its basis in the valorization requirements of capital. Even according to the Club of Rome, the effects of the ecological crisis will be fully visible, and take on catastrophic forms, only in "two or three generations," and then only if no steps are taken to counter it.

In the two reports produced for the Club of Rome that Harich cites³ a reprieve for the world seems possible by the midst of the next century. In the meantime a way must be found to move from today's "undifferentiated" growth to an "organic" growth of

economy and society. This way is to be discovered thanks to a computer model that extrapolates the trend of present-day development into the future. Admittedly, the results are only a matter of probability, not of certainty. While the first report on the "limits to growth" concerned the world as a whole, dealing with the increase of the total population and the average per capita income, etc., the second report emphasizes that this sort of analysis cannot lead to a solution of the problem. The world consists of various, very different parts, which must be dealt with in particular ways, with regard for regional necessities. If the first report warned that the world system will break down in the middle of the next century, the second report predicts not the breakdown of the world but that of one or another of its regions (which would, of course, *ipso facto* mean the destruction of the world as a totality).

Whether fragment by fragment or all at once, the breakdown is inevitable, according to the computer's logic; it follows that it is up to "statesmen" to pull the carts out of the muck. Here we encounter the mentality of the Club of Rome's scientific experts, for example, M. Mesarovic and E. Pestel, responsible for the second report. They refer throughout not to capitalist society, but to "society" (or simply to "humanity"), threatened by nature. From their point of view the ecological crisis has its roots in activities that "arise from people's best intentions." That these intentions involve the exploitation of the workers does not occur to them; to the contrary, they are convinced "that the decrease of human labor through the exploitation of non-human sources of energy is a project with which every person must agree." They are unable to grasp that it is exactly the increase in the exploitation of human labor that makes necessary the over-exploitation of natural resources. They have either no understanding of the society in which they live or they feign a lack of understanding in order not to be offensive. But looking at their proposed solutions, it is the first of these that seems correct.

These proposals amount to a series of noncommittal forms of talk, such as emphasizing the necessity of a global solution of the ecological problem; a more balanced world economy through the simultaneous abolition of under- and over-development in the respective regions; an appropriate worldwide allocation of non-renewable raw materials and fuels; an effective population policy; a turn towards solar energy instead of more nuclear reactors; increased support for the poor countries by the rich ones; and similar praiseworthy measures. Not a word is wasted on how this program is to be put into practice. The experts are certain only that the solution of the *problématique humaine* requires the closest cooperative work on the world scale, since there can only be a future "when history no longer, as earlier, is determined by individuals or social classes, but through the devotion of material resources to the security of human existence." The recognition of capitalist reality is on the same level as Harich's understanding of the "socialist" world. In both cases we have to do only with conjurations spoken into the wind.

Somehow the authors of the second report do not themselves feel quite right. As "rational" as the computer is, people are irrational. Although the computer indicates that people can be helped not through conflict but through cooperation, the computer analysis necessarily deals only with the material limits of growth. But the world is threatened by people themselves on the basis of social, political, and organizational problems, which in the last analysis spring from "human nature." Since the Club of Rome is non-partisan with respect to politics, the problems can't be discussed politically. The report notes that the quickest road to the annihilation of humankind would certainly be an atomic war; but this eventuality, like the enormous wastage of expensive resources through armaments and militarism, is not included in the framework of the problems discussed by the Club of Rome, since the world is exposed to the danger of complete destruction even without an atomic war.

A dialectician like Harich can not be satisfied with this. The distinction made by the Club of Rome between natural and social problems contradicts the "interaction" between humanity and nature. For Harich the threatened atomic war and the ecological crisis stand in a close connection. Indeed, he does not deny that there are social contradictions that drive towards war, but "in a time in which economic growth comes up against unbreachable natural limits, we must also readjust our views a little. Under the conditions of the ecological crisis natural and social factors are intertwined in previously unknown ways ... The influence of society on nature can create a situation which then in turn drives society to seek refuge in a catastrophe." It is therefore not enough to strive directly to prevent war; we must treat the ecological crisis as a possible cause of war, in order to avoid war itself.

Indeed, we had two world wars and many smaller skirmishes behind us before the threat to the ecology entered our consciousness. These wars happened not because nations fought like dogs with a bone over declining supplies of raw materials but because the capitalist competitive struggle over the surplus value extracted from the laboring population played out on a worldwide field. The competitive struggle exists under all circumstances, with or without shortages of raw materials, and thus has nothing to do with the latter but arises from the capitalist mode of production. Even when a shortage of raw materials and consumption goods leads to war instead of some other solution, this results from the form of society and not from the shortage as such. On this question, however, Harich again comes close to the Club of Rome's one-sided conception of the problem as purely ecological, with no reference to the actual capitalist world. This world is for him too, despite the "intertwining of natural and social factors," only a subordinate factor: it is the ecological crisis which can lead to war, so that avoiding war presupposes solving the ecological crisis. But war can break out tomorrow, while the ecological crisis is not expected till the middle of the next century. It can even be forestalled by an atomic war, which would provide a ghastly demonstration of humanity's destruction not by nature but by capitalism.

But is there actually an ecological crisis? The numbers produced by the computer model to which Harich and the Club of Rome refer are open to doubt from many different points of view. As the amount of raw materials and energy consumed by the

industrial countries over the last 50 years can only be determined very inexactly, we are even less sure what is still available. Here we are dealing with unknown quantities, as can already be seen in the fact that estimates are continuously revised, not only because of the discovery of new reserves, but also because of improvements in methods of estimation. To give only one example: The untouched coal supplies in the United States were estimated in 1969 at 3,000 billion tons; in 1975 this quantity was increased by 23 percent on the basis of better methods of estimation. Since such mistakes of estimation, whether too high or too low, do not alter the fact that the raw materials and fuels will in the end be utilized, it does not make much sense to counterpose optimistic expectations to the pessimistic ones. But as things are, it is to be expected that for the foreseeable future economic policy and therefore politics will not be determined by ecological considerations, but—as earlier—by capital's immanent requirement of profit production.

The historical limit of capital is, according to Marx, capital itself. The development of the social forces of production by way of capital accumulation not only requires nonrenewable raw materials and brings with it relative overpopulation, but also leads to the tendency of the rate of profit to fall in relation to the growing mass of capital. With this the limits to capitalist expansion come into view. Even without the limits set by nature capital must come to an end. It is therefore not oriented directly to nature but to the profit rate, dependent on surplus value, which, as capital accumulates, determines the relation between nature and society. Thus the "ecological" apprehensions of the Club of Rome often have a prosaic background, as was prominent, for example, in the so-called oil crisis of 1973. Here there was not a sudden lack of oil but politically motivated price increases, following the inflation general in the world, which shifted the supply-demand relation to the benefit of the oil producers. If it were left to the market, only a considerable decline in demand could affect the monopoly price, and only with difficulty (and over time). But the increase in oil production together with increasing prices will, according to the second report of the Club of Rome, lead not only to a more rapid exhaustion of energy supplies but to a transfer of wealth and economic power from the industrial countries to the oil-producing states. Iran has already achieved minority control of the German Krupp works. Within ten years the oil states, with an accumulated capital of 500 billion dollars, could take a large part of Western capital into their hands, thus shaking the world economy, inclusive of the underdeveloped countries, to the deepest level. Without going into these ungrounded and more than dubious speculations, it can be noted that the wishes of the Club of Rome for a "global solution of the energy problem" appears to derive more from an economic than from an ecological point of view. In any case, it is at the moment not an actual lack of natural resources that menaces the world but the competitive war for global profit carried on by every possible means.

As the movement of the world is determined by profit, the capitalists concern themselves with the ecological problem only insofar as it affects profit. The capitalists have no interest in the destruction of the world; if it turns out that saving the world can be profitable, then the protection of the world will become another business—all the more because environmental destruction is itself an instrument of competition for shares of the total profit. This problem appears in the economic literature under the heading of "externality," the distinction between private effects and the social concomitant symptoms of capitalist production. Social phenomena are also ecological phenomena, as when the emission of pollutants of all sorts, which enter into natural cycles, finally destroys the necessary global balance of oxygen. In this way the destruction of the environment, which is often taken to be faster and more dangerous than the rapid use of material resources, is bound up with the exhaustion of resources. Such widely known phenomena, which can both be ascribed to profit production and also curtail profit production, affect different capitals differently and thus themselves provoke attempts to limit the destruction within capitalism. It depends on the mass of surplus value whether these attempts can be successful, i.e. on the increasing exploitation of the workers or on their "modest standard of living." On this point Harich's proposals are at one with the measures recommended by capital, as expressed by the Club of Rome.

It is not impossible that—with sufficient surplus value production—capital itself could be able to avoid the destruction of the environment, in its own interest, as long as the cost is paid by the working population. And as accumulation sets limits to surplus value, the ongoing destruction of the environment can be traced back to the limits of the capitalist mode of production. We are, that is, faced here with a social, not an ecological problem. But what about overpopulation? This is a problem in itself, which will not simply vanish even with an imaginable rational management of raw materials and the end of environmental destruction. The production of means of subsistence is declining in relation to the increasing population. Is the earth becoming less fertile? Or is it simply inadequate to support the growing population?

Among other studies, one undertaken three years ago for the Club of Rome, under the leadership of H. Linnemann, showed that the global capacity for food production has grown sufficiently to support a doubling of the population.⁴ The decrease in agricultural production relative to the growing population has at present nothing to do with any limits set by nature, but originates in social relations that stand in the way of an extension of production. Moreover, the hunger existing in the world has nothing to do with the productivity of agriculture. Even a doubling of production could not eliminate it; indeed it would mostly likely increase it even more. The existence of sufficient foodstuffs is not enough to guarantee the satisfaction of human consumption needs. Commodities exist only for effective demand, and for those who need it without the capacity to pay overproduction can be even more dangerous than a crop failure caused by nature. That crop failures can also lead to hunger has, of course, nothing to do with incalculable nature, but with the social neglect of measures which, with the increase in agricultural production and the improvement of agricultural productivity, could accumulate sufficient reserves to be able to offset natural catastrophes.

In the underdeveloped, largely agrarian world, as for example in South Asia, the problem is not so much the miserliness of nature

as a social class system of institutions and power relationships that stands in the way of increasing production and productivity. Besides the increasingly unsustainable subsistence economy, it is landed property, the tenant-farming system, usurious loan capital, the plantation economy, and the parasitical state bureaucracy that hinder any progressive development by maintaining the existing social structure. In the African states the specialization in the production of industrial raw materials created by the colonial system has led to a situation whose further development is today also subordinated to the capitalist crisis cycle and the impoverishment bound up with it. Not only there, but also in the South American nations, increasing industrialization comes at the cost of agricultural production. Former exporting countries are becoming importers of foodstuffs. Russia's development into a competitive world power too has required the relative neglect of agriculture, making the importation of food necessary whenever there is a bad harvest. The increasing discrepancy between industrial and agricultural production has less to do with population growth and decreasing fertility of the soil than with the one-sided over-emphasis on industrial expansion, or capital's expansion, demanded by capitalist competition.

Of course, the population has grown enormously. Since medicine has lowered mortality figures considerably, the number of births, remaining the same, appears as a "population explosion." It is obvious, however, that the population can not continue to grow and sooner or later will have to stabilize in relation to ecological givens. But from this it does not follow that the current size of the population is responsible for the poverty existing in the world. A level of production adequate to the needs of the increasing population would very likely show that it is too soon to speak of an absolute overpopulation. The percentage growth in production and productivity of agriculture in countries like the United States and Australia exceeds by far the percentage of population increase. Although the same results cannot be achieved everywhere, even with the same methods, it is certainly still possible to increase the world's production of food meaningfully.

And with a general improvement of living conditions can we expect to see a conscious decrease in population growth. Of course, this can also be achieved through the use of state violence, the method prized by Harich. Thus in India at the moment bills have been proposed mandating forced sterilization, to be imposed on all families after their second child. From this it is only a small step to the direct extermination of excessive people. But there is also another thing: While it is so far the privilege of a minority of the world's population, the level of birth control already achieved in the developed countries demonstrates the possibility of population planning, which in the course of time could not only stabilize the population but even diminish it.

The warnings of Harich and the Club of Rome would be completely senseless if they were not accompanied by the conviction that the threatening ecological catastrophe can be prevented. The idea that this is a real possibility in itself means that whether humanity still has an indefinite future depends on society and not on nature. For Harich the destruction of capitalist production is the unavoidable presupposition for this future. Only in this way can the ecological problem find a general solution. But what he has in mind is not a revolution that might lead to a communist society, the only kind of society that would be in a position to solve the ecological problem. The Club of Rome cannot even imagine Harich's pseudo-revolution but relies on the good will and readiness of enlightened statesmen to take the measures necessary to solve the ecological problem. But we cannot expect from this quarter measures that would do away with the social structure and so with its statesmen themselves.

What, then, is to be done in this apparently hopeless situation? In general, nothing, so long as the problem is looked at from the standpoint of ecology. It is, first of all, not the thing that is most obvious that threatens the continuing existence of humankind. The "ecological crisis" is to a great extent itself a product of a situation of social crisis, and the approaching catastrophe arising from the latter is coming sooner than the ecological catastrophe. As things stand today, the great likelihood of conflicts involving atomic warfare makes concern with the ecological crisis superfluous. We need to concentrate on social processes to stop the atomic criminals of East and West. If the world's workers do not succeed in this they will also not be in a position to counter the ecological threat or to create the communist society that would make possible the further existence of humanity.

Notes

1. Wolfgang Harich, *Kommunismus ohne Wachstum? Babeuf und der "Club of Rome."* Sechs Interviews mit Freimut Duve und Briefe an ihn. (Hamburg: Reinbek, 1975).

2. MECW, vol. 38, p. 425.

3. Donella Meadows, et al., *The Limits to Growth* (1972) and Mihailo Mersarovic and Eduard Pestel, *Mankind at the Turning Point* (1975).

4. Hans Linnemann, *MOIRA: model of international relations in agriculture: report of the project group 'Food for a Doubling World Population'* (Amsterdam: North-Holland, 1980).

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